

3.0 AFFECTED ENVIRONMENT

Because the proposed action would only change an administrative process, impacts to many of the physical and biological components of the human environment are not predicted. A change in the administrative procedures will not affect the location or methods of groundfish harvest. Because environmental impacts are not expected from the alternatives for most of the environmental components, a detailed description of the marine environment is not necessary. For those components where impacts may occur, detailed descriptions are found in other recent NEPA analyses and will be cross referenced for the purposes of this EA/RIR/IRFA. General information and sources of additional information regarding the environment of the groundfish fisheries off Alaska is provided in this section.

Table 3.1 shows the components of the human environment and whether the alternatives may have an impact on the component beyond status quo, or Alternative 1, and require further analysis. Potential impacts under marine mammals are related to Steller sea lions and groundfish harvest and are further explained in section 4.3. Potential impacts on groundfish are explained in section 4.1. Socioeconomic descriptions and impacts are described in the RIR and IRFA, Sections 5 and 6. Environmental impacts from a range of TACs using the administrative process under Alternative 1 are analyzed in the 1998 SEIS (NMFS 1998) and in the draft PSEIS (NMFS 2001c). Extensive environmental analysis on all environmental components is not needed in this document because none of the alternatives are anticipated to have environmental impacts on all components. Analysis is included for those environmental components on which an alternative may have an impact beyond impacts analyzed for Alternative 1 in previous NEPA analysis.

Table 3.1 Resources potentially affected by an alternative beyond Alternative 1

Alternative	Potentially Affected Component							
	Physical	Benthic Comm.	Groundfish	Marine Mammals	Seabirds	Other Species	Prohibited Species	Socioeconomic
2	N	N	Y	Y	N	N	N	Y
3	N	N	Y	N	N	N	N	Y
4	N	N	Y	Y	N	N	N	Y

N = no impact anticipated by the alternative on the component.

Y = an impact is possible if the alternative is implemented.

The groundfish fisheries occur in the North Pacific Ocean and Bering Sea in the U.S. EEZ from 50° N to 65°N latitude. The harvest specifications apply to groundfish fishing under approved FMPs for the BSAI and GOA. The draft PSEIS provides a complete detailed description of the affected environment. Features of the physical environment are described in section 3.1. Fishing gear effects on substrate and benthic communities are described in section 3.2. Groundfish resources are in section 3.3, marine mammals in Section 3.4, seabirds in Section 3.5, other species in Section 3.6, prohibited species in Section 3.7, contaminants in Section 3.8, interactions between climate, commercial fishing and the ecosystem in Section 3.9 and the socioeconomic environment in Section 3.10. The draft PSEIS (NMFS 2001c) is available through the NMFS Alaska Region home page at

<http://www.fakr.noaa.gov>. This EA/RIR/IRFA adopts much of the environmental status description in the draft PSEIS because it is a recent, detailed description. Additionally, the current, detailed status of each target species category, biomass estimates, and acceptable biological catch specifications are presented annually both in summary and in detail in the annual GOA and BSAI SAFE reports (NPFMC 2001a and 2001b). The SAFE reports for the 2002 fisheries are available through the Council's home page at <http://www.fakr.noaa.gov/npfmc>.

3.1 Status of Managed Groundfish Species

Designated target groundfish species and species groups in the BSAI are walleye pollock, Pacific cod, yellowfin sole, Greenland turbot, arrowtooth flounder, rock sole, other flatfish, flathead sole, sablefish, Pacific ocean perch, other rockfish, Atka mackerel, squid, and other species. Designated target species and species groups in the GOA are walleye pollock, Pacific cod, deep water flatfish, rex sole, shallow water flatfish, flathead sole, arrowtooth flounder, sablefish, other slope rockfish, northern rockfish, Pacific Ocean perch, shortraker and rougheye rockfish, pelagic shelf rockfish, demersal shelf rockfish, Atka mackerel, thornyhead rockfish, and other species. This EA cross-references and summarizes the status of the stock information in the SAFE reports (NPFMC 2001a for BSAI and 2001b for GOA). For detailed life history, ecology, and fishery management information regarding groundfish stocks in the BSAI and GOA see Section 3.3. in the draft PSEIS (NMFS 2001c).

For those stocks where enough information is available, none are considered overfished or approaching an overfished condition. The BSAI and GOA Plan Teams met in November 2001 to finalize the SAFE reports and to forward ABC and OFL recommendations to the Council for action at its December 2001 meeting. The ABC, OFL, and TAC amounts for each target species or species group for 2002 were specified in an emergency interim rule (67 FR 956, January 8, 2002) due to the necessity to have them effective simultaneously with Steller sea lion protection measures at the start of the fishing year. Tables 3.2 and 3.3 show the 2002 ABC, OFL and TAC amounts for the BSAI and GOA groundfish fisheries, respectively.

Table 3.2 2002 Acceptable Biological Catch (ABC), Total Allowable Catch (TAC), Initial TAC (ITAC), CDQ Reserve Allocation, and Overfishing Levels of Groundfish in the Bering Sea and Aleutian Islands Area (BSAI)¹

[All amounts are in metric tons]

Species	Area	Overfishing level	ABC	TAC	ITAC ²	CDQ reserve ³
Pollock ⁴	Bering Sea (BS)	3,530,000	2,110,000	1,485,000	1,283,040	148,500
	Aleutian Islands (AI)	31,700	23,800	1,000	900	100
	Bogoslof District	46,400	4,310	100	90	10
Pacific cod	BSAI	294,000	223,000	200,000	170,000	15,000
Sablefish ⁵	BS	2,900	1,930	1,930	821	265
	AI	3,850	2,550	2,550	541	431
Atka mackerel	BSAI	82,300	49,000	49,000	41,650	3,675
	Western AI	.....	19,700	19,700	16,745	1,478
	Central AI	.....	23,800	23,800	20,230	1,785
	Eastern AI/BS	.....	5,500	5,500	4,675	413
Yellowfin sole	BSAI	136,000	115,000	86,000	73,100	6,450
Rock sole	BSAI	268,000	225,000	54,000	45,900	4,050
Greenland turbot	BSAI	36,500	8,100	8,000	6,800	600
	BS	.....	5,427	5,360	4,556	402
	AI	.....	2,673	2,640	2,244	198
Arrowtooth flounder	BSAI	137,000	113,000	16,000	13,600	1,200
Flathead sole	BSAI	101,000	82,600	25,000	21,250	1,875
Other flatfish ⁶	BSAI	21,800	18,100	3,000	2,550	225
Alaska plaice	BSAI	172,000	143,000	12,000	10,200	900
Pacific ocean perch	BSAI	17,500	14,800	14,800	12,580	1,111
	BS		2,620	2,620	2,227	197
	AI Total	.....	12,180	12,180	10,353	914
	Western AI	.....	5,660	5,660	4,811	425
	Central AI	.....	3,060	3,060	2,601	230
	Eastern AI	.....	3,460	3,460	2,941	260
	BSAI	9,020	6,760	6,760	5,746	
Northern rockfish ⁷	BS			19	16	See 7
	AI			6,741	5,730	506
	BSAI	1,369	1,028	1,028	874	
Shortraker/Roughey ⁷	BS			116	99	See 7
	AI			912	775	68
	BSAI					
Other rockfish ⁸	BS	482	361	361	307	27
	AI	901	676	676	575	51
Squid	BSAI	2,620	1,970	1,970	1,675	
Other species ⁹	BSAI	78,900	39,100	30,825	26,201	2,312
TOTAL		4,974,242	3,184,085	2,000,000	1,717,399	187,504

¹ Amounts are in metric tons. These amounts apply to the entire Bering Sea (BS) and Aleutian Islands (AI) management area unless otherwise specified. With the exception of pollock, and for the purpose of these specifications, the Bering Sea subarea includes the Bogoslof District.

² Except for pollock, squid, and the portion of the sablefish TAC allocated to hook-and-line or pot gear, 15 percent of each TAC is put into a reserve. The ITAC for each species is the remainder of the TAC after the subtraction of the reserve.

³ Except for pollock and the hook-and-line or pot gear allocation of sablefish, one half of the amount of the TACs placed in reserve, or 7.5 percent of the TACs, is designated as a CDQ reserve for use by CDQ participants (see § 679.31).

⁴ The American Fisheries Act (AFA) requires that 10 percent of the annual pollock TAC be allocated as a directed fishing allowance for the CDQ sector. NMFS then subtracts 4 percent of the remainder as an incidental catch allowance of pollock, which is not apportioned by season or area. The remainder is further allocated by sector as follows: inshore, 50 percent; catcher/processor, 40 percent; and motherships, 10 percent. NMFS, under regulations at § 679.24(b)(4), prohibits nonpelagic trawl gear to engage in directed fishing for non-CDQ pollock in the BSAI.

⁵ The ITAC for sablefish reflected in Table 3 is for trawl gear only. Regulations at § 679.20(b)(1) do not provide for the establishment of an ITAC for the hook-and-line or pot gear allocation for sablefish. Twenty percent of the sablefish TAC allocated to hook-and-line gear or pot gear and 7.5 percent of the sablefish TAC allocated to trawl gear is reserved for use by CDQ participants (see § 679.31(c)).

⁶ "Other flatfish" includes all flatfish species, except for Pacific halibut (a prohibited species), flathead sole, Greenland turbot, rock sole, yellowfin sole, arrowtooth flounder, and Alaska Plaice.

⁷ The CDQ reserves for shortraker, rougheye, and northern rockfish will continue to be managed as the "other red rockfish" complex for the BS. For 2002 the CDQ reserve for the "other red rockfish" complex is 10 mt.

⁸ "Other rockfish" includes all Sebastes and Sebastolobus species except for Pacific ocean perch, northern, shortraker, and rougheye rockfish.

⁹ "Other species" includes sculpins, sharks, skates and octopus. Forage fish, as defined at § 679.2, are not included in the "other species" category.

Table 3.3 2002 ABCs, TACs, and Overfishing Levels of Groundfish for the Western/Central/West Yakutat (W/C/WYK), Western (W), Central (C), Eastern (E) Regulatory Areas, and in the West Yakutat (WYK), Southeast Outside (SEO), and Gulf-Wide (GW) Districts of the Gulf of Alaska [Values are in metric tons]

Species	Area ¹	ABC	TAC	Overfishing
Pollock ²				
Shumagin	(610)	17,730	17,730	
Chirikof	(620)	23,045	23,045	
Kodiak	(630)	9,850	9,850	
WYK	(640)	1,165	1,165	
Subtotal	W/C/WYK	51,790	51,790	75,480
SEO	(650)	6,460	6,460	8,610
Total		58,250	58,250	84,090
Pacific cod ³				
	W	22,465	16,849	
	C	31,680	24,790	
	E	3,455	2,591	
Total		57,600	44,230	77,100
Flatfish ⁴				
	W	180	180	
(deep-	C	2,220	2,220	
water)	WYK	1,330	1,330	
	SEO	1,150	1,150	
Total		4,880	4,880	6,430
Rex sole ⁴				
	W	1,280	1,280	
	C	5,540	5,540	
	WYK	1,600	1,600	
	SEO	1,050	1,050	
Total		9,470	9,470	12,320
Flathead sole				
	W	9,000	2,000	
	C	11,410	5,000	
	WYK	1,590	1,590	
	SEO	690	690	
Total		22,690	9,280	29,530
Flatfish ⁵				
	W	23,550	4,500	
(shallow-	C	23,080	13,000	
water)	WYK	1,180	1,180	
	SEO	1,740	1,740	
Total		49,550	20,420	61,810
Arrowtooth flounder				
	W	16,960	8,000	
	C	106,580	25,000	
	WYK	17,150	2,500	
	SEO	5,570	2,500	
Total		146,260	38,000	171,060

Table 3.3. (continued)

Species	Area ¹	ABC	TAC	Overfishing	
Sablefish ⁶	W	2,240	2,240		
	C	5,430	5,430		
	WYK	1,940	1,940		
	SEO	3,210	3,210		
Subtotal	E	5,150	5,150		
Total		12,820	12,820	19,350	
Pacific ⁷	W	2,610	2,610	3,110	
ocean	C	8,220	8,220	9,760	
perch	WYK	780	780		
	SEO	1,580	1,580		
Subtotal	E			2,800	
Total		13,190	13,190	15,670	
Short	W	220	220		
raker/	C	840	840		
rougheye ⁸	E	560	560		
Total		1,620	1,620	2,340	
Other	W	90	90		
rockfish	C	550	550		
^{9,10}	WYK			260	150
	SEO	4,140	200		
Total		5,040	990	6,610	
Northern	W	810	600		
Rockfish ^{10,12}	C	4,170	4,170		
	E	N/A	N/A		
Total		4,980	4,980	5,910	
Pelagic	W			510	510
shelf	C			3,480	3,480
rockfish ¹³	WYK			640	640
	SEO	860	860		
Total		5,490	5,490	8,220	
Thornyhead	W			360	360
rockfish	C			840	840
	E	790	790		
Total				1,990	1,990
Demersal	SEO	350	350	480	
shelf					
rockfish ¹¹					
Atka	GW	600	600	6,200	
mackerel					

Table 3.3. (continued)

Species	Area ¹	ABC	TAC	Overfishing
Other ¹⁴ species	GW	N/A ¹⁵	11,330	N/A
<hr/>				
TOTAL ¹⁶		394,780	237,890	509,450

¹ Regulatory areas and districts are defined at § 679.2.

² Pollock is apportioned in the Western/Central Regulatory areas among three statistical areas. During the A and B seasons the apportionment is based on the relative distribution of pollock biomass at 23 percent, 68 percent, and 9 percent in Statistical Areas 610, 620, and 630 respectively. During the C and D seasons pollock is apportioned based on the relative distribution of pollock biomass at 47 percent, 23 percent, and 30 percent in Statistical Areas 610, 620, and 630 respectively. These seasonal apportionments are shown in Table 21. In the West Yakutat and the Southeast Outside Districts of the Eastern Regulatory Area the annual pollock TAC is not divided into seasonal allowances.

³ The annual Pacific cod TAC is apportioned 60 percent to an A season and 40 percent to a B season in the Western and Central Regulatory Areas of the GOA. Pacific cod is allocated 90 percent for processing by the inshore component and 10 percent for processing by the offshore component. Seasonal apportionments and component allocations of TAC are shown in Table 22.

⁴ "Deep water flatfish" means Dover sole, Greenland turbot, and deepsea sole.

⁵ "Shallow water flatfish" means flatfish not including "deep water flatfish," flathead sole, rex sole, or arrowtooth flounder.

⁶ Sablefish is allocated to trawl and hook-and-line gears (Table 20).

⁷ "Pacific ocean perch" means Sebastes alutus.

⁸ "Shortraker/rougeye rockfish" means Sebastes borealis (shortraker) and S. aleutianus (rougeye).

⁹ "Other rockfish" in the Western and Central Regulatory Areas and in the West Yakutat District means slope rockfish and demersal shelf rockfish. The category "other rockfish" in the Southeast Outside District means Slope rockfish.

¹⁰ "Slope rockfish" means Sebastes aurora (aurora), S. melanostomus (blackgill), S. paucispinis (bocaccio), S. goodei (chilipepper), S. crameri (darkblotch), S. elongatus (greenstriped), S. variegatus (harlequin), S. wilsoni (pygmy), S. babcocki (redbanded), S. proriger (redstripe), S. zacentrus (sharpchin), S. jordani (shortbelly), S. brevispinis (silvergery), S. diploproa (splitnose), S. saxicola (stripetail), S. miniatus (vermillion), and S. reedi (yellowmouth). In the Eastern GOA only, "slope rockfish" also includes northern rockfish, S. polvspinus.

¹¹ "Demersal shelf rockfish" means Sebastes pinniger (canary), S. nebulosus (china), S. caurinus (copper), S. maliger (quillback), S. helvomaculatus (rosethorn), S. nigrocinctus (tiger), and S. ruberrimus (yelloweye).

¹² "Northern rockfish" means Sebastes polvspinis.

¹³ "Pelagic shelf rockfish" means Sebastes ciliatus (dusky), S. entomelas (widow), and S. flavidus (yellowtail).

¹⁴ "Other species" means sculpins, sharks, skates, squid, and octopus. The TAC for "other species" equals 5 percent of the TACs of assessed target species.

¹⁵ N/A means not applicable.

¹⁶ The total ABC is the sum of the ABCs for assessed target species.

3.2 Status of Prohibited Species Stocks

Prohibited species taken incidentally in groundfish fisheries include: Pacific salmon (chinook, coho, sockeye, chum, and pink salmon), steelhead trout, Pacific halibut, Pacific herring, and Alaska king, Tanner, and snow crabs. In order to control bycatch of prohibited species in the groundfish fisheries, the Council annually specifies halibut limits for the GOA fishery and halibut and other PSC limits in BSAI. The status of the prohibited species is detailed in section 3.7 of the draft PSEIS (NMFS 2001c) and in the SAFE reports (NPFMC 2001a, 2001b). During haul sorting, these species or species groups are to be returned to the sea with a minimum of injury except when their retention is required by other applicable law.

3.3 Forage Species and Nonspecified Species

Forage fish species are abundant fishes that are preyed upon by marine mammals, seabirds and other commercially important groundfish species. The following forage species are included in the forage fish category established in 1998: Osmeridae (which includes capelin and eulachon), Myctophidae (lanternfishes), Bathylagidae (deep sea smelts), Ammodytidae (sand lances), Trichodontidae (sandfishes), Pholididae (gunnels), Stichaeidae (pricklebacks), Gonostomatidae (bristlemouths), and the Order Euphausiacea (krill). For further detailed discussion of forage fish species, see section 3.3.1.13 of the draft PSEIS (NMFS 2001c) and the EA for Amendments 36 and 39 to the FMPs (NMFS 1998b). Nonspecified species are fish and invertebrate species that are not managed under the FMPs, such as jellyfish and sea stars. Detailed information on nonspecified species may be found in section 3.6 of the draft PSEIS (NMFS 2001c).

The information available for forage and nonspecified species is much more limited than that available for target fish species. Estimates of biomass, seasonal distribution of biomass, and natural mortality are unavailable for most forage and non-specified species. Predictions of impacts from different levels of harvest can only be qualitatively described. Management concerns, data limitations, research in progress, and planned research to address these concerns are discussed in Section 4.5 of the draft PSEIS (NMFS 2001c). Direct effects of groundfish fishing include the removal of forage and nonspecified species from the environment as incidental catch in the groundfish fisheries. Information on the current research on several forage species and nonspecified species may be found in Ecosystem Considerations for 2002 (NMFS 2001a, appendix C).

3.4 Status of Marine Habitat

The adjacent marine waters outside the EEZ, adjacent State of Alaska waters, shoreline, freshwater inflows, and atmosphere above the waters, constitutes habitat for prey species, other life stages, and species that move in and out of, or interact with, the target species in the management areas (NMFS 2001c). Distinctive aspects of the habitat include water depth, substrate composition, substrate infauna, light penetration, water chemistry (salinity, temperature, nutrients, sediment load, color, etc.), currents, tidal action, phytoplankton and zooplankton production, associated species, natural disturbance regimes, and the seasonal variability of each aspect. Substrate types include bedrock, cobbles, sand, shale, mud, silt, and various combinations of organic material and invertebrates which may be termed biological substrate. Biological substrates present in these management areas include corals, tunicates, mussel beds, tube worms. Biological substrate has the aspect of ecological state (from pioneer to climax) in addition to the organic and inorganic components. Ecological state is heavily dependant on natural and anthropogenic disturbance regimes.

The fishery management plans (NPFMC 1999a, 1999b) contain descriptions of habitat requirements and life histories of the managed species. All the marine waters and benthic substrates in the management areas comprise the habitat of the target species. Much remains to be learned about habitat requirements for most of the target species. A detailed discussion of habitat and potential effects of fishing on habitat is in section 3.2 of the draft PSEIS (NMFS 2001c).

3.5 Status of Marine Mammal Populations

Marine mammals not listed under the ESA that may be present in the GOA and BSAI include cetaceans, [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon spp.*)] as well as pinnipeds [northern fur seals (*Callorhinus ursinus*), and Pacific harbor seals (*Phoca vitulina*)] and the sea otter (*Enhydra lutris*). The sea otter has been identified as a candidate for listing under the Endangered Species Act and the US Fish and Wildlife Service (USFWS) is conducting a formal review. For further information on marine mammal population status, see Section 3.4 of the draft PSEIS (NMFS 2001c).

3.6 Seabird Species Population Status

Seabirds by definition spend the majority of their life at sea rather than on land. Alaska's extensive estuaries and offshore waters provide breeding, feeding, and migrating habitat for approximately 100 million seabirds. Thirty-four species breed in the Bering Sea/Aleutian Islands (BSAI) and Gulf of Alaska (GOA) regions numbering 36 million and 12 million individuals in each respective area. Another 6 species breed at other locations in Alaska. In addition, up to 50 million shearwaters and 3 albatross species feed in Alaskan waters during the summer months but breed farther south. The current world population of short-tailed albatross is approximately 1200 individuals. Detailed seabird information on species population status, life history, ecology, and bycatch is contained in section 3.5 of the draft PSEIS (NMFS 2001c) and section 3.7 of the Steller sea lion SEIS (NMFS 2001b).

3.7 Status of Endangered or Threatened Species

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*; ESA), provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by the NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species, and by the USFWS for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA listed species is based on the biological health of that species. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)]. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and

anadromous fish species. The Secretary of the Interior, acting through the USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to listing species under the ESA, the critical habitat of a newly listed species is designated concurrent with its listing to the “maximum extent prudent and determinable” [16 U.S.C. § 1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

Federal agencies have an affirmative mandate to conserve listed species. One assurance of this is Federal actions, activities or authorizations (hereafter referred to as Federal action) must be in compliance with the provisions of the ESA. Section 7 of the ESA provides a mechanism for consultation by the Federal action agency with the appropriate expert agency (NMFS or USFWS). Informal consultations, resulting in letters of concurrence, are conducted for Federal actions that may affect but are not expected to adversely affect listed species or critical habitat. Formal consultations, resulting in biological opinions, are conducted for Federal actions that may have an adverse effect on the listed species. Through the biological opinion, a determination is made as to whether the proposed action is likely to jeopardize the continued existence of a listed species (jeopardy) or destroy or adversely modify critical habitat (adverse modification). If the determination is that the action proposed (or ongoing) will cause jeopardy, reasonable and prudent alternatives may be suggested which, if implemented, would modify the action to avoid the likelihood of jeopardy to the species or destruction or adverse modification of designated critical habitat. A biological opinion with the conclusion of no jeopardy may contain conservation recommendations intended to further reduce the negative impacts to the listed species. These conservation recommendations are advisory to the action agency [50 CFR. 402.25(j)]. If a likelihood exists of any taking⁴ occurring during promulgation of the action, an incidental take statement may be appended to a biological opinion to provide for the amount of take that is expected to occur from normal promulgation of the action.

Twenty-three species occurring in the GOA and/or BSAI groundfish management areas are currently listed as endangered or threatened under the ESA (Table 3.4). The group includes great whales, pinnipeds, Pacific salmon and steelhead, and seabirds.

⁴ The term “take” under the ESA means “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct” [16 U.S.C. § 1538(a)(1)(B)].

Table 3.4 ESA listed and candidate species that range into the BSAI or GOA groundfish management areas and whether Reinitiation of Section 7 Consultation is occurring for the proposed action

Common Name	Scientific Name	ESA Status	Whether Reinitiation of ESA Consultation is occurring
Blue Whale	<i>Balaenoptera musculus</i>	Endangered	No
Bowhead Whale	<i>Balaena mysticetus</i>	Endangered	No
Fin Whale	<i>Balaenoptera physalus</i>	Endangered	No
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered	No
Right Whale	<i>Balaena glacialis</i>	Endangered	No
Sei Whale	<i>Balaenoptera borealis</i>	Endangered	No
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered	No
Steller Sea Lion (Western population)	<i>Eumetopias jubatus</i>	Endangered	No
Steller Sea Lion (Eastern Population)	<i>Eumetopias jubatus</i>	Threatened	No
Chinook Salmon (Puget Sound)	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Chinook Salmon (Lower Columbia R.)	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Chinook Salmon (Upper Columbia R. Spring)	<i>Oncorhynchus tshawytscha</i>	Endangered	No
Chinook Salmon (Upper Willamette.)	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Chinook Salmon (Snake River Spring/Summer)	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Chinook Salmon (Snake River Fall)	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Sockeye Salmon (Snake River)	<i>Oncorhynchus nerka</i>	Endangered	No
Steelhead (Upper Columbia River)	<i>Onchorynchus mykiss</i>	Endangered	No
Steelhead (Middle Columbia River)	<i>Onchorynchus mykiss</i>	Threatened	No
Steelhead (Lower Columbia River)	<i>Onchorynchus mykiss</i>	Threatened	No
Steelhead (Upper Willamette River)	<i>Onchorynchus mykiss</i>	Threatened	No
Steelhead (Snake River Basin)	<i>Onchorynchus mykiss</i>	Threatened	No
Steller's Eider ¹	<i>Polysticta stelleri</i>	Threatened	Ongoing
Short-tailed Albatross ¹	<i>Phoebastria albatrus</i>	Endangered	Ongoing
Spectacled Eider ¹	<i>Somateria fishcheri</i>	Threatened	Ongoing
Northern Sea Otter ¹	<i>Enhydra lutris</i>	Candidate	No

¹The Steller's eider, short-tailed albatross, spectacled eider, and Northern sea otter are species under the jurisdiction of the U.S. Fish and Wildlife Service. For the bird species, critical habitat has been proposed only for the Steller's eider (65 FR 13262). The northern sea otter has been proposed by USFWS as a candidate species (November 9, 2000; 65 FR 67343).

Of the species listed under the ESA and present in the action area (Table 3.4), some may be negatively affected by groundfish fishing. Steller sea lions are negatively affected by groundfish fisheries, but NMFS has implemented protection measures for the groundfish fisheries that avoid the likelihood of posing

jeopardy or adverse modification of critical habitat for the western distinct population segment of Steller sea lions (NMFS 2001b, appendix A).

Section 7 consultations with respect to actions of the federal groundfish fisheries have been done for all the species listed in Table 3.1, either individually or in groups. See section 3.8 of the SEIS (NMFS 1998a), for summaries of section 7 consultations done prior to December 1998. An FMP-level biological opinion was prepared pursuant to Section 7 of the ESA on all NMFS listed species present in the fishery management areas for the entire groundfish fisheries program. This comprehensive biological opinion (BiOp) was issued November 30, 2000 (NMFS 2000). The Steller sea lion was the only species to be determined to be in jeopardy or risk of adverse modification of its habitat based upon the FMPs. Consultations prepared subsequent to the SEIS (NMFS 1998a) are summarized below.

Steller sea lions and other ESA listed marine mammals.

The only marine mammal identified as a concern with the implementation of the FMPs for the BSAI and GOA groundfish fisheries was the Steller sea lion. In compliance with the ESA, NMFS developed a reasonable and prudent alternative (RPA) for the BSAI and GOA groundfish fisheries to avoid jeopardy to endangered Steller sea lions and adverse modification of their critical habitat. The RPA is based on the following three main principles: (1) temporal dispersion of fishing effort, (2) spatial dispersion of fishing effort, and (3) sufficient protection from fisheries competition for prey in waters adjacent to rookeries and important haulouts. The RPA focused on three fisheries that posed the most concern for competition with Steller sea lions for prey; the BSAI and GOA pollock and Pacific cod fisheries, and the BSAI Atka mackerel fishery. Neither the conclusions of the comprehensive BiOp (NMFS 2000) nor the RPA was adopted by the Council at its December 2000 meeting for numerous reasons, including lack of confidence in the scientific premises supporting the biological opinion, lack of public and Council input during its development, and general disagreement about the efficacy of the RPA measures. Subsequently, the Alaska congressional delegation sponsored a rider to the 2001 appropriations bill (Section 209 of Pub. L. 106-554) that provided direction for a one-year phase-in of the RPA and opportunity for the Council to assess and potentially modify the RPA prior to full implementation in 2002 based on independent scientific reviews or other new information.

The protection measures in the emergency rule (66 FR 7276, January 22, 2001) reflect the first year implementation phase of the RPA. In January 2001, the Council established an RPA Committee to make recommendations on Steller sea lion protection measures for the second half of 2001 and to develop Steller sea lion protection measures for 2002 and beyond. The RPA Committee was composed of 21 members from the fishing community, the environmental community, NMFS, the Council's Science and Statistical Committee, the Council's Advisory Panel, and ADF&G. In April 2001, the RPA Committee presented its recommendations to the Council for fishery management measures for the second half of 2001. These recommendations were then forwarded by the Council to NMFS and were implemented by amendment to an emergency interim rule (66 FR 37167, July 17, 2001). In June 2001, the RPA Committee recommended Steller sea lion protection measures for 2002 and beyond, and the Council modified and forwarded these recommendations to NMFS in October 2001. ESA consultation was requested on these protection measures and a biological opinion (2001 BiOp) was prepared by the Protected Resources Division (NMFS 2001b, Appendix A). The final 2001 BiOp concluded that the proposed Steller sea lion protection

measures were not likely to jeopardize the continued existence of either the eastern or western distinct population segment of Steller sea lions or adversely modify their critical habitat. These protection measures are implemented by emergency interim rule in 2002 (67 FR 956, January 8, 2002) and are scheduled for permanent rulemaking for 2003 and beyond. Detailed analysis of the Steller sea lion protection measures is contained in the SEIS for Steller sea lion protection measures (NMFS 2001b).

ESA Listed Pacific Salmon

When the first Section 7 consultations for ESA listed Pacific salmon taken by the groundfish fisheries were done in 1994 and 1995 only three evolutionary significant units (ESUs) of Pacific salmon were listed that ranged into the fishery management areas (NMFS 1994, 1995). Additional ESUs of Pacific salmon and steelhead were listed under the ESA in 1998 and 1999 (NMFS 1999). Only the Snake River fall chinook salmon has designated critical habitat and none of that designated habitat is marine habitat. Under Section 7 regulations, consultation should be reinitiated in the event of additional listings. Using the year 2000 proposed TAC specifications, NMFS reinitiated consultations for ESA listed Pacific salmon for all twelve ESUs of Pacific salmon that are thought to range into Alaskan waters. The consultation for the Pacific salmon species was issued December 22, 1999, and contained a determination of not likely to jeopardize their continued existence. No critical habitat has been designated for these species within the action area, therefore, none will be affected by the proposed fisheries. The biological opinion reviewed the status of Snake river fall chinook, Snake River spring/summer chinook, Puget Sound chinook, Upper Columbia river spring chinook, Upper Willamette River chinook, Lower Columbia river chinook, Upper Columbia river steelhead, Upper Willamette River steelhead, Middle Columbia river steelhead, Lower Columbia river steelhead, and Snake river Basin steelhead, the environmental baseline for the action area, the effects of the proposed fishery and the cumulative effects. The opinion was accompanied by an Incidental Take Statement that states the catch of listed fish will be limited specifically by the measures proposed to limit the total bycatch of chinook salmon. Bycatch should be minimized to the extent possible and in any case should not exceed 55,00 chinook per year in the BSAI fisheries or 40,000 chinook salmon per year in the GOA fisheries.

For the year 2002 harvest specifications, the December 23, 1999 biological opinion on the effects of the 2000 BSAI and GOA groundfish fisheries harvest specifications on listed salmon was extended till January 1, 2003. The comprehensive BiOp (NMFS 2000) stated that ESA listed Pacific salmon are not in jeopardy or risk of adverse modification of their habitat by the groundfish fisheries in the BSAI or GOA.

ESA Listed Seabirds

The only new information on seabirds since publication of the SEIS (NMFS 1998a) concerns the taking of short-tailed albatross and subsequent Section 7 consultations on listed seabird species. It is summarized below:

On 22 October 1998, NMFS reported the incidental take of 2 endangered short-tailed albatrosses in the hook-and-line groundfish fishery of the BSAI. The first bird was taken on 21 September 1998, at 57°30'N, 173°57'W. The bird had identifying leg bands from its natal breeding colony in Japan. It was 8 years old. In a separate incident, one short-tailed albatross was observed taken on 28 September 1998, at 58°27'N, 175°16'W, but the specimen was not retained for further analysis. Identification of the bird was confirmed by USFWS seabird experts. The confirmation was based upon the observer's description of key

characteristics that matched that of a subadult short-tailed albatross to the exclusion of all other species. A second albatross was also taken on 28 September 1998, but the species could not be confirmed (3 species of albatross occur in the North Pacific). Both vessels were using seabird avoidance measures when the birds were hooked.

The USFWS listed the short-tailed albatross as an endangered species under the ESA throughout its United States range (65 FR 46644, July 31, 2000). Under terms of the 1999 biological opinion, incidental take statement, a take of up to 4 birds is allowed during the 2-year period of 1999 and 2000 for the BSAI and GOA hook-and-line groundfish fisheries (USFWS 1999). If the anticipated level of incidental take is exceeded, NMFS must reinstate formal consultation with the USFWS to review the need for possible modification of the reasonable and prudent measures established to minimize the impacts of the incidental take.

NMFS Regional Office, NMFS Groundfish Observer Program, and the USFWS Offices of Ecological Services and Migratory Bird Management are actively coordinating efforts and communicating with each other in response to the 1998 take incidents and are complying to the fullest extent with ESA requirements to protect this species. Regulations at 50 CFR § 679.24(e) and 679.42(b)(2) contain specifics regarding seabird avoidance measures. In February 1999, NMFS presented an analysis on seabird mitigation measures to the Council that investigated possible revisions to the currently required seabird avoidance methods that could be employed by the long-line fleet to further reduce the take of seabirds.

The Council took final action at its April 1999 meeting to revise the existing requirements for seabird avoidance measures. The Council's preferred alternative would: 1) explicitly specify that weights must be added to the groundline (Currently, the requirement is that baited hooks must sink as soon as they enter the water. It is assumed that fishermen are weighting the groundlines to achieve this performance standard.); 2) the offal discharge regulation would be amended by requiring that prior to any offal discharge, embedded hooks must be removed; 3) streamer lines, towed buoy bags and float devices could both qualify as bird scaring lines (Specific instructions are provided for proper placement and deployment of bird scaring lines.); 4) towed boards and sticks would no longer qualify as seabird avoidance measures; 5) the use of bird scaring lines would be required in conjunction to using a lining tube; and 6) night-setting would continue to be an option and would not require the concurrent use of a bird scaring line. These revised seabird avoidance measures are expected to be in effect in 2002. The avoidance measures affect the method of harvest in the hook-and-line fisheries, but are not intended to affect the amount of harvest.

A Biological Opinion on the BSAI hook-and-line groundfish fishery and the BSAI trawl groundfish fishery for the ESA listed short-tailed albatross was issued March 19, 1999, by the USFWS for the years 1999 through 2000 (USFWS 1999). The conclusion continued a no jeopardy determination and the incidental take statement expressing the requirement to immediately reinstate consultations if incidental takes exceed four short-tailed albatross over two years' time. Consultations on short-tailed albatross was not re-initiated for the year 2000 TAC specifications because the March 19, 1999, biological opinion covered through the end of calendar year 2000. In September 2000, NMFS requested re-initiation of consultation for all listed species under the jurisdiction of the USFWS, including the short-tailed albatross, spectacled eider and Steller's eider for the BSAI and GOA FMPs and 2001-2004 TAC specifications. Based upon NMFS' review of the fishery action and the consultation material provided to USFWS, NMFS concluded that the BSAI and

GOA groundfish fisheries are not likely to adversely affect either the spectacled eider or the Steller's eider or destroy or adversely modify the critical habitat that has been proposed for each of these species.

3.8 Ecosystem Considerations

Ecosystem considerations for the BSAI and GOA groundfish fisheries are explained in detail in *Ecosystem Considerations for 2002* (NMFS 2001a). That document provides updated information on biodiversity, essential fish habitats, consumptive and non-consumptive sustainable yields, and human considerations. This information is intended to be used in making ecosystem-based management decisions such as establishing ABC and TAC levels.

3.9 The Human Environment

The operation of the groundfish fishery in the Bering Sea/Aleutian Islands and the Gulf of Alaska is described by gear type in the SEIS (NMFS, 1998a) and in the draft PSEIS (NMFS 2001c). General background on the fisheries with regard to each species is given in the BSAI and GOA groundfish FMPs (NPFMC 1999a and 1999b). The following fishery sectors are most likely to be affected by a change in the annual harvest specification process: pollock (GOA and BSAI), Pacific cod fishery, Atka mackerel fishery, and the rock sole roe fishery. These fisheries are predominantly high volume fisheries (or high value fisheries) that are prosecuted early in the calendar year and could be affected by beginning the fishery midyear, as proposed in Alternative 3. Environmental impacts resulting from the specified TACs would be assessed in annual EAs that accompany the final harvest specifications.

3.9.1 Fishery Participants

For detailed information on the fishery participants including vessels and processors see sections 5.3 and 5.4 of this EA/RIR/IRFA. Revising the process by which annual harvest specifications are set may result in impacts on all fishery participants but would particularly affect those who concentrate effort early in the calendar year, depending on which alternative is selected. Section 5.0 outlines the economic impacts of each alternative on fishery participants. Additional information regarding fishery participants can be found in the 2000 Economic SAFE report (Hiatt and Terry, 2001).

3.9.2 Economic Aspects of the Fishery

The most recent description of the economic aspects of the groundfish fishery is contained in the 2000 Economic SAFE report (Hiatt and Terry, 2001). This report, incorporated herein by reference, presents the economic status of groundfish fisheries off Alaska in terms of economic activity and outputs using estimates of catch, bycatch, ex-vessel prices and value, the size and level of activity of the groundfish fleet, the weight and value of processed products, wholesale prices, exports, and cold storage holdings. The catch, fleet size and activity data are for the fishing industry activities that are reflected in Weekly Production Reports, Observer Reports, fish tickets from processors who file Weekly Production Reports, and the annual survey of groundfish processors. External factors that, in part, determine the economic status of the fisheries are foreign exchange rates, the prices and price indices of products that compete with products from these fisheries, and fishery imports. Sections 5.0 and 6.0 of this document contain additional information regarding the economics of the groundfish fisheries.